

COMPLETE LISTING OF THE CLAIMS

1. (Currently Amended) An overetch system comprising:
 - a metal etcher for performing overetching;
 - a target device placed in the metal etcher;
 - a device model that includes layout data;
 - an overetch controller coupled the metal etcher, to control overetching and to control removal of an overetch amount of material from the target device based at least on overetch parameters provided to the controller by the device model.
2. (Currently Amended) The overetch system of claim 1, wherein the target device is a wafer having at least one semiconductor device having a metal layer ~~comprised of a material selected from the group comprising aluminum [[and]] or an~~ aluminum alloy.
3. (Original) The overetch system of claim 2, wherein the wafer has an oxide layer covered with remaining residue from a metal etch process.
4. (Original) The overetch system of claim 3, wherein the remaining residue comprises unremoved aluminum.
5. (Original) The overetch system of claim 1, wherein the metal etcher is able to perform metal etching and metal overetching.
6. (Original) The overetch system of claim 1, wherein the overetch controller controls overetching utilizing feedback data.
7. (Original) The overetch system of claim 1, further comprising at least one sensor to measure feedback data of the target device during overetching and to provide the feedback data to the overetch controller, wherein the overetch controller utilizes the feedback data to control overetching.

8. (Cancelled)
9. (Original) The overetch system of claim 1, wherein the overetch controller comprises:
 - an overetch time controller;
 - a set of etch control models; and
 - a control system.
10. (Original) The overetch system of claim 9, wherein the overetch time controller initiates and halts the metal etcher during overetch processes.
11. (Original) The overetch system of claim 10, wherein the set of etch control models include layout data, etchable area and percentage of etchable area.
12. (Original) The overetch system of claim 9, wherein the control system is implemented on a computer system.
13. (Currently Amended) The overetch system of claim 9, wherein the control system identifies the target device and selects at least one relevant model [[form]] from the set of etch control models.
14. (Original) The overetch system of claim 9, wherein the set of etch control models comprise two dimensional information.
15. (Original) The overetch system of claim 9, wherein the set of etch control models comprise three dimensional information.
16. (Original) An overetch system comprising:
 - a target device;
 - a metal etching means for removing an overetch amount of material from the target device;

an overetch control means for controlling the metal etching means, the overetch control means comprising:

- a set of etch control models;
- a timer means for initiating and halting the metal etching means; and
- a control means for selecting at least one relevant model from the set of etch control models and determining an overetch endpoint.

17-25 (Cancelled)

26. (New) A method of overetching a metal residual material deposited on a semiconductor device comprising:

- providing a semiconductor device having a remaining metal residue on a first layer, the semiconductor device having a layout of a circuit design;

- utilizing a device model to determine overetch parameters, the device model corresponding to the layout of the semiconductor device;

- performing an overetch according to the overetch parameters while monitoring the semiconductor device for compliance with the overetch parameters to remove a tolerable amount of the first layer and the remaining residue.

27. (New) The method of claim 26. wherein the overetch parameters comprise an overetch endpoint determined as a function of etchable area and etch rate regions of the device model.

28. (New) The method of claim 26, further comprising modifying the overetch process on non-compliance with at least one overetch parameter.